

Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Withdrawn) A hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability characterized by containing, by mass%, C: 0.01 to 0.3%, Si: 0.005 to 0.6%, Mn: 0.1 to 3.3%, P: 0.001 to 0.06%, S: 0.001 to 0.01%, Al: 0.01 to 1.8%, and N: 0.0005 to 0.01% and having a balance of Fe and unavoidable impurities, wherein the metal structure is comprised of ferrite and, by area ratio, 5% to 60% of tempered martensite.

2. (Withdrawn) A hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 1, characterized in that said hot dip galvanized composite high strength steel sheet further contains, by mass%, one or more of Mo: 0.05 to 0.5%, V: 0.01 to 0.1%, Ti: 0.01 to 0.2%, Nb: 0.005 to 0.05%, Cu: 1.0% or less, Ni: 1.0% or less, Cr: 1.0% or less, Ca: 0.0003 to 0.005%, REM: 0.0003 to 0.005%, and B: 0.0003 to 0.002%.

3. (Withdrawn) A hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 1, characterized in that said hot dip galvanized composite high strength steel sheet the mass% of Si and Al and the target tensile strength (TS) satisfy the following equation 1:

$$(0.0012 \times [\text{TS target value}] - 0.29 - [\text{Si}]) / 1.45 < \text{Al} < 1.5 - 3 \times [\text{Si}] \dots \text{equation 1}$$

[TS target value]: Design value of tensile strength of steel sheet (MPa), [Si]: Si mass%, Al: Al mass%

4. (Currently Amended) A method of production of a hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability characterized by:

hot rolling and then cold rolling a slab containing, by mass%, C: 0.01 to 0.3%, Si: 0.005 to 0.6%, Mn: 0.1 to 3.3%, P: 0.001 to 0.06%, S: 0.001 to 0.01%, Al: 0.25 to 1.8%, and N: 0.0005 to 0.01% and a balance of Fe and unavoidable impurities,

heating the cold rolled steel sheet in a hot dip galvanization heating step to a temperature of A_{c1} to $A_{c3}+100^{\circ}\text{C}$, and holding the temperature there for 30 seconds to 30 minutes,

then cooling the steel sheet at a cooling rate of 1°C/s or higher to a temperature of 450°C to 600°C ,

~~then~~ immediately thereafter hot dip galvanizing the steel sheet at the temperature of 450°C to 600°C ,

alloying the steel sheet at 470°C to 600°C after the hot dip galvanization,

then cooling the steel sheet at a cooling rate of 1°C/s or higher to the martensite transformation point or less in temperature,

then holding the steel sheet at a temperature of 200°C to 500°C for 1 second to 60 seconds, and the steel sheet is produced in a continuous hot dip galvanization line, and

then cooling the steel sheet at a cooling rate of 5°C/s or higher to 100°C or less so as to avoid further tempering and obtain a metal structure comprised of ferrite and tempered martensite of an area ratio of 5% to 60% and the concentration of Fe in hot dip galvanized area being 7% to 10%.

5. (Canceled)

6. (Previously Presented) The method of production of a hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 4, characterized by said further treating a galvanized layer by one or more of a chromate treatment, inorganic coating film treatment, chemical conversion, or resin coating film treatment.

7. (Previously Presented) The method of production of a hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 4, characterized in that said hot dip galvanized composite high strength steel sheet

further contains, by mass%, one or more of Mo: 0.05 to 0.5%, V: 0.01 to 0.1%, Ti: 0.01 to 0.2%, Nb: 0.005 to 0.05%, Cu: 1.0% or less, Ni: 1.0% or less, Cr: 1.0% or less, Ca: 0.0003 to 0.005%, REM: 0.0003 to 0.005%, and B: 0.0003 to 0.002%.

8. (Previously Presented) The method of production of a hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 4, wherein in the hot dip galvanized composite high strength steel sheet, the mass% of Si and Al and a target tensile strength (TS) must satisfy the following equation 1:

$$(0.0012 \times [\text{TS target value}] - 0.29 - [\text{Si}]) / 1.45 < \text{Al} < 1.5 - 3 \times [\text{Si}] \dots \text{equation 1}$$

where [TS target value]: design value of tensile strength of steel sheet (MPa), [Si]: Si mass%, Al: Al mass%.

9. (Previously Presented) The method of production of a hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 4, characterized by, from said cold rolling to the hot dip galvanization heating step, preplating one or more of Ni, Fe, Co, Sn, and Cu to 0.01 to 2.0 g/m² per surface of the steel sheet.

10. (Previously Presented) The method of production of a hot dip galvanized composite high strength steel sheet excellent in shapeability and hole enlargement ability as set forth in claim 9, characterized by pickling the steel sheet before said preplating.